

REMARKS

Claims 1-6, 9-21, and 24-29 were rejected under 35 U.S.C. 102(b) as being anticipated by Hauck et al. (U.S. Patent No. 5,907,688), hereafter referred to as Hauck.

Claims 7-8 and 22-23 were rejected under 35 U.S.C. 103(a) as being unpatentable over Hauck et al. (U.S. Patent No. 5,907,688) in view of Harrell (U.S. Patent No. 5,457,779).

Applicant respectfully traverses these rejections based on the following reasoning.

Claim 1 recites:

A method for allocating a stream of operations in a graphics system to be performed by a plurality of calculation pipelines, the method comprising:
determining if a first calculation pipeline of the plurality of calculation pipelines is performing a low latency operation;
if the first calculation pipeline is performing a low latency operation, then providing a next operation in the stream of operations to the first calculation pipeline; and
if the first calculation pipeline is performing a high latency operation, then providing the next operation in the stream of operations to a second calculation pipeline.

Hauck neither teaches nor suggests a method for allocating the individual operations in one input stream to multiple output calculation pipelines by: 1) determining if a first calculation pipeline of the plurality of calculation pipelines is performing a low latency operation, 2) providing a next operation in the stream of operations to the first calculation pipeline if the first calculation pipeline is performing a low latency operation, or 3) providing the next operation in the stream of operations to a second calculation pipeline if the first calculation pipeline is performing a high latency operation.

Instead, Hauck teaches (col. 2, lines 34-46) a method for determining which buffer of a plurality of buffers for a plurality of data streams needing access to one output bus is next given access to the one output bus:

“A method of selecting a data stream in an access to a shared bus in a computer system is described. This method begins by requesting access to the shared bus. An evaluation of whether a first or a second data stream is a higher priority data stream is performed after the access request. The higher priority stream is selected to access the shared bus.

A bus agent implementing this method includes a data stream selector coupled to receive a plurality of data streams and bus cycle generation circuitry coupled to a bus request line and a bus grant line. A priority evaluation circuit coupled to the data stream selector and the bus cycle generation circuitry is configured to control selection of one of the plurality of data streams based on a priority selection.”

Hauck does not teach assessing the latency of the operation that is currently being performed on the one output bus, nor does he teach a process for deciding between more than one output bus for the next operation.

Hauck does teach the use of latency for the purpose of assessing the status of the buffers for the multiple data streams that need access to the one output bus.

Hauck nowhere teaches or suggests a system or method for assigning an operation to a selected one of a plurality of possible calculation pipelines. In fact, Hauck describes a single bus and a process for assessing which of multiple buffers connected to the single bus has a greater need and therefore a higher priority and should be granted access to the one output bus. Furthermore, Hauck nowhere teaches or suggests a system or method for assigning an operation to one of a plurality of calculation pipelines based on the latency of a current operation being processed by the calculation pipeline.

Therefore, claim 1 and its dependents are patentably distinguished over Hauck, for at least the reasons stated above. Claims 16, 17, 28, and 29 recite features similar to those recited in claim 1, and thus, claim 16, claim 17 and its dependents, claim 28, and claim 29 are patentably distinguished over Hauck based on reasoning similar to that given above in support of claim 1.

CONCLUSION

Applicant submits the application is in condition for allowance, and an early notice to that effect is requested.

If any extensions of time (under 37 C.F.R. § 1.136) are necessary to prevent the above referenced application(s) from becoming abandoned, Applicant(s) hereby petition for such extensions. If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert & Goetzel PC Deposit Account No. 50-1505/5181-87600/JCH.

Also enclosed herewith are the following items:

☒ Return Receipt Postcard

Respectfully submitted,



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